

WHAT IS CLAIMED IS:

1. A controller for controlling interruption and restarting data writing to a recording medium, wherein the data writing is performed by emitting a laser beam against the recording medium at a write level that is used when data read from a buffer memory is recorded on the recording medium, the controller comprising:

an address memory for storing at least one of an address of the recording medium and an address of the buffer memory when the writing of data to the recording medium is interrupted, each address indicating a data location where the writing interruption occurred;

a synchronizing circuit for reading the data written to the recording medium prior to the interruption by emitting the laser beam at a read level, reading the data stored in the buffer memory, and synchronizing the written data and the stored data; and

a restart circuit for restarting the data writing based on the address stored in the address memory, wherein the restart circuit switches the laser beam from the read level to the write level before the restart circuit restarts the data writing.

2. The controller according to claim 1, further comprising a level memory for storing data of the write level that exists when data writing is interrupted, wherein the level of the laser beam when writing is restarted is in accordance with the data stored in the level memory.

3. The controller according to claim 1, wherein the laser beam is switched from the read level to the write level when any one of an address of the data read from the recording medium and an address of the data read from the buffer memory matches an address preceding the address

stored in the address memory by a predetermined number of addresses.

4. A controller for controlling interruption and restarting data writing to a recording medium, wherein the data writing is performed by emitting a laser beam against the recording medium in accordance with data read from a buffer memory, the controller comprising:

an address memory for storing at least one of an address of the recording medium and an address of the buffer memory when the writing of data to the recording medium is interrupted, each address indicating a location of data when the writing interruption occurred;

a synchronizing circuit for reading the data written to the recording medium prior to the interruption by emitting the laser beam, reading the data stored in the buffer memory, and synchronizing the written data and the stored data; and

a restart circuit for generating an instruction for restarting the writing of data to the recording medium based on the address stored in the address memory, wherein the restart circuit generates the instruction for restarting the writing of data before the data read from the recording medium by the synchronizing circuit reaches the interruption location.

5. The controller according to claim 4, wherein the laser beam is emitted against the recording medium at a first power level during the writing of data and is emitted against the recording medium at a second power level during the reading of data by the synchronizing circuit, the second power level being lower than the first power level, and wherein the restart circuit provides time for the laser beam to shift from the second power level to the first power level when generating the instruction for restarting the

writing of data.

5           6.     The controller according to claim 4, further comprising a level memory for storing data representing the power level of the laser beam that exists when the writing of data is interrupted, wherein the laser beam is emitted at a power level that is in accordance with the data stored in the level memory when writing is restarted.

10           7.     The controller according to claim 4, further comprising a power source for supplying the optical head with power to generate the laser beam, wherein the power source is activated simultaneously with the generation of the instruction for restarting the writing of data.

15           8.     A controller for controlling interruption and restarting data writing to a recording medium, wherein the data writing is performed by emitting a laser beam against the recording medium with a power that is in accordance with data read from a buffer memory and supplied from a power source, the controller comprising:

20                 an address memory for storing at least one of an address of the recording medium and an address of the buffer memory when the writing of data to the recording medium is interrupted, each address indicating a data location where the writing interruption occurred;

25                 a synchronizing circuit for reading the data written to the recording medium prior to the interruption by emitting the laser beam, reading the data stored in the buffer memory, and synchronizing the written data and the stored data; and

30                 a restart circuit for restarting data writing based on the address stored in the address memory, wherein the power source is activated prior to the time when the writing of data is restarted.

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9. The controller according to claim 8, further comprising a level memory for storing data of the power level that exists when data writing is interrupted, wherein the power level of the laser beam when writing is restarted is in accordance with the data stored in the level memory.

10. The data recorder according to claim 8, wherein the power source is activated when any one of an address of the data read from the recording medium and an address of the data read from the buffer memory matches an address preceding the address stored in the address memory by a predetermined number of addresses.

11. A method for controlling interruption and restarting of writing data to a recording medium, wherein the data writing is performed by emitting a laser beam against the recording medium at a write level that is in accordance with data read from a buffer memory, the method comprising:

storing at least one of an address of the recording medium and an address of the buffer memory when the writing of data to the recording medium is interrupted, each address indicating a data location where the writing interruption occurred;

reading the data written to the recording medium prior to the writing interruption by emitting the read level laser beam against the recording medium and reading the data stored in the buffer memory;

synchronizing the written data and the stored data; generating an instruction for restarting data writing to the recording medium based on the address stored in the address memory; and

shifting the laser beam from the read level to the write level before writing is restarted.

12. A method for controlling interruption and restarting of data writing to a recording medium, wherein the data writing is performed by emitting a laser beam against the recording medium in accordance with data read from a buffer memory, the method comprising:

storing at least one of an address of the recording medium and an address of the buffer memory when the writing of data to the recording medium is interrupted, each address indicating a data location where the writing interruption occurred;

reading the data written to the recording medium prior to the writing interruption by emitting the laser beam against the recording medium and reading the data stored in the buffer memory;

synchronizing the written data and the stored data; and

generating an instruction for restarting data writing based on the address stored in the address memory, wherein the writing is restarted before the location of the data read from the recording medium in the reading step reaches the interruption location.

13. A method for controlling interruption and restarting data writing to a recording medium, wherein the data writing is performed by emitting a laser beam against the recording medium at a power level that is in accordance with data read from a buffer memory and supplied from a power source, the method comprising:

storing at least one of an address of the recording medium and an address of the buffer memory when the writing of data to the recording medium is interrupted, each address indicating a data location where the writing interruption occurred;

reading the data written to the recording medium prior

to the writing interruption by emitting the laser beam and reading the data stored in the buffer memory;

synchronizing the written data and the stored data;

5 generating an instruction for restarting the writing of data to the recording medium based on the address stored in the address memory; and

activating a power source for generating power of the laser beam prior to the restart of the writing of data.

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